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jc930 U.S. PTO 09/20/00

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PTO/SB/05 (4/98)
Approved for use through 09/30/2000. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No.	190-1463
First Inventor or Application Identifier	Stokes
Title	Loan Modeller Method and Apparatus
Express Mail Label No.	EL 388 803 501 US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231

1. [X] * Fee Transmittal Form *(e.g., PTO/SB/17)* *(Submit an original and a duplicate for fee processing)*
2. [X] Specification [Total Pages 15] *(preferred arrangement set forth below)*
   - Descriptive title of the Invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to Microfiche Appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
3. [X] Drawing(s) *(35 U.S.C. 113)* [Total Sheets 2]
4. Oath or Declaration [Total Pages 3]
   - a. [X] Newly executed (original or copy)
   - b. [ ] Copy from a prior application (37 C.F.R. § 1.63(d)) *(for continuation/divisional with Box 16 completed)*
     - i. [ ] DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).

5. [ ] Microfiche Computer Program *(Appendix)*
6. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   - a. [ ] Computer Readable Copy
   - b. [ ] Paper Copy (identical to computer copy)
   - c. [ ] Statement verifying identity of above copies

JC675 U.S. PTO 09/665769 09/20/00

ACCOMPANYING APPLICATION PARTS

7. [X] Assignment Papers (cover sheet & document(s))
8. [ ] 37 C.F.R.§3.73(b) Statement *(when there is an assignee)* [ ] Power of Attorney
9. [ ] English Translation Document *(if applicable)*
10. [X] Information Disclosure Statement (IDS)/PTO-1449 [X] Copies of IDS Citations
11. [ ] Preliminary Amendment
12. [X] Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
13. [ ] * Small Entity Statement(s) *(PTO/SB/09-12)* [ ] Statement filed in prior application, Status still proper and desired
14. [X] Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
15. [ ] Other: .....

16. **If a CONTINUING APPLICATION,** *check appropriate box, and supply the requisite information below and in a preliminary amendment:*

[ ] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No: _____/_____

Prior application information. *Examiner* _____ *Group / Art Unit:* _____

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

[ ] *Customer Number or Bar Code Label* *(Insert Customer No. or Attach bar code label here)* or [X] *Correspondence address below*

Name	William M. Lee, Jr.				
	Lee, Mann, Smith, McWilliams, Sweeney & Ohlson				
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Country	USA	Telephone	(312) 368-1300	Fax	(312) 368-6620

Name (Print/Type)	William M. Lee, Jr.	Registration No. (Attorney/Agent)	26,935
Signature	William M. Lee	Date	9/20/00

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

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FEE TRANSMITTAL for FY 1999

Patent fees are subject to annual revision.
Small Entity payments must be supported by a small entity statement, otherwise large entity fees must be paid. See Forms PTO/SB/09-12.

TOTAL AMOUNT OF PAYMENT ($) 730

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	Stokes
Examiner Name	
Group / Art Unit	
Attorney Docket No.	190-1463

METHOD OF PAYMENT (check one)

1. [X] The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit Account Number: 12-0913
Deposit Account Name: Lee, Mann, Smith, McWilliams, Sweeney & Ohlson

[X] Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17

2. [X] **Payment Enclosed:** [X] Check [ ] Money Order [ ] Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	760	201	380	Utility filing fee	690
106	310	206	155	Design filing fee	
107	480	207	240	Plant filing fee	
108	760	208	380	Reissue filing fee	
114	150	214	75	Provisional filing fee	

SUBTOTAL (1) ($) 690

2. EXTRA CLAIM FEES

	Extra Claims		Fee from below	Fee Paid
Total Claims 10	-20** = 0	X		=
Independent Claims 3	- 3** = 0	X		=
Multiple Dependent				=

***or number previously paid, if greater; For Reissues, see below*

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	18	203	9	Claims in excess of 20
102	78	202	39	Independent claims in excess of 3
104	260	204	130	Multiple dependent claim, if not paid
109	78	209	39	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet.	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	380	216	190	Extension for reply within second month	
117	870	217	435	Extension for reply within third month	
118	1,360	218	680	Extension for reply within fourth month	
128	1,850	228	925	Extension for reply within fifth month	
119	300	219	150	Notice of Appeal	
120	300	220	150	Filing a brief in support of an appeal	
121	260	221	130	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,210	241	605	Petition to revive - unintentional	
142	1,210	242	605	Utility issue fee (or reissue)	
143	430	243	215	Design issue fee	
144	580	244	290	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Petitions related to provisional applications	
126	240	126	240	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	40
146	760	246	380	Filing a submission after final rejection (37 CFR 1.129(a))	
149	760	249	380	For each additional invention to be examined (37 CFR 1.129(b))	

Other fee (specify) _____

Other fee (specify) _____

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 40

SUBMITTED BY				Complete (if applicable)	
Typed or Printed Name	William M. Lee, Jr.			Reg. Number	26,935
Signature		Date	9/20/00	Deposit Account User ID	

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

LOAN MODELLER METHOD AND APPARATUS

Background to the Invention

This invention relates to a computer-implemented method and apparatus for modelling loans, such as for example home finance loans. More specifically, the invention is concerned with enabling users to model the implications of different repayment profiles.

It is well known to use a computer to calculate repayments on a loan, given basic parameters such as loan amount, loan term, and interest rate. Such a facility has been made available over the Internet, to enable users to investigate various "what-if" scenarios, and to assist them in deciding which loan is best suited to their needs.

The object of the present invention is to provide an improved method and apparatus for modelling loans, which provides more flexibility than known methods and apparatus.

Summary of the Invention

According to the invention a computer-implemented method for modelling loans, the method comprises:

(a) enabling a user to enter parameters relevant to a loan, the parameters including loan amount and loan term;

(b) enabling the user to specify a number of options relevant to the loan, the options including at least one of the following:

- low-start or fast-start loans,
- regularly increasing repayments,
- reduced repayments for a specified period, and
- variable repayments over different months of the year;

(c) computing repayments due over the term of the loan, based on the parameters and options entered by the user; and

(d) visually displaying information indicating the repayments due over the term of the loan.

It will be seen that the invention thus allows the user considerable flexibility in remodelling the loan with different repayment profiles, to see the implications of different decisions.

The information indicating the repayments due over the term of the loan may conveniently be displayed in some easily-understandable visual representation, such as a graph, bar chart, or table.

Brief Description of the Drawings

Figure 1 is a block diagram of a computer system for implementing a loan modelling method.

Figure 2 is a representation of a main screen displayed to the user, including a graph.

Figure 3 is a flow chart of a repayment profile wizard.

Figure 4 shows an example of the graph after running the repayment profile wizard.

Description of an Embodiment of the Invention

One method and apparatus for modelling loans in accordance with the invention will now be described by way of example with reference to the accompanying drawings.

Referring to Figure 1, this shows a server computer 10 and a number of user computers 11, interconnected by the Internet 12 or by a dedicated Intranet. The server contains a loan modeller application 13, which may be implemented using Active Server Pages (ASP). Each user computer contains a client application

14, which in this example is a conventional web browser, providing access to the loan modeller application 13.

The server computer 10 may, for example, be operated by a bank or other financial services institution, as a service to customers or potential customers. The user computers 11 may be personal computers belonging to individual customers, or may be operated by agents or financial advisors. Alternatively, users may access the loan modeller application by way of a computer kiosk or Automated Teller Machine ATM.

When the loan modeller application is started, it displays an initial screen, including the following items:

- A box allowing the user to enter the loan amount.
- A pair of drop-down menus, allowing the user to specify the loan period, in years and months.
- A drop-down menu allowing the user to select an interest rate option. Interest rate options may include a standard variable rate option, and one or more fixed-rate options, in which interest is fixed at a specified rate until a specified date.

The initial screen contains a button labelled "Start Modelling". Clicking on this button causes the loan modeller application to calculate the repayments for the loan, in the conventional manner, and then to display a main screen, as illustrated in Figure 2.

The main screen includes a graph 20, which displays the results produced by the loan modeller, for viewing by the user. The initial monthly repayment is displayed in a text box 21. A drop-down menu 22 enables the user to select one of the following options for the graph 20:

- Monthly repayments. When this option is selected, the graph 20 displays the repayments in each month over the term of the loan, as shown in Figure 2. The loan repayments are initially

the same for each month over the entire term of the loan, and so the graph is initially simply a straight line parallel to the time axis.

- Loan balance. In this case, the graph 20 displays the balance of the loan in each month over the entire term of the loan.
- Interest charges. In this case, the graph 20 displays the interest charges in each month over the entire term of the loan.
- Cumulative interest. In this case, the graph 20 displays the cumulative interest charges in each month over the entire term of the loan.
- Cumulative repayments. In this case, the graph 20 displays the cumulative repayments in each month over the entire term of the loan.

The main screen also contains a pair of selection buttons 23, which enable the user to select between two modes:

- Calculate initial monthly repayment. In this mode, the user can specify the loan term, in years and months, using a pair of drop-down menus 24. When the loan term is changed, the loan modeller application calculates the effect of this change, and displays the results in the graph 20 and in the text box 21 as described above. In this way, the user can explore the effect of varying the loan term.
- Calculate loan term. In this mode, two additional buttons 25 are displayed on the main screen, one labelled "reduce repayments by 1%" and the other labelled "increase repayments by 1%". If the user clicks on either of these buttons, the loan modeller application calculates the effect of the specified change in monthly repayments, and displays the results on the graph 20, and in the text box 21. Thus, it can be seen that this option provides a simple way for the user to explore the effects of varying the repayments.

The main screen also includes a drop-down menu 26, which enables the user to select one of a number of interest rate options, as specified above. Using these menus, the user can explore the effect of changing the interest rate option.

The main screen also includes a "Repayment Profile Wizard" button 27. Clicking on this button calls up an entry screen, containing text as follows:

> ***Visual Loan Modeller - Repayment Profile Wizard***
> *The Visual Loan Modeller Repayment Profile Wizard is designed to guide you through setting a repayment structure across the term of your loan.*
> *Most loans use a flat repayment structure, where you pay the same each month throughout the full term of the loan. Whilst this is easy to understand, it does not take account of your changing circumstances - for example, the fact that your income is likely to increase over time.*
> *This system will enable you to see the implications of different loan repayment profiles, to find one which meets your needs now and in the future.*

The entry screen includes two buttons labelled "Cancel" and "Start the Wizard". Clicking on "Cancel" returns the user to the main screen. Clicking on "Start the Wizard" starts a repayment profile wizard program, which performs the following steps 30-35, as illustrated in Figure 3.

(Step 30) The repayment profile wizard displays a screen containing the following text:

> ***Visual Loan Modeller - Repayment Profile Wizard***
> *Let's start by looking at the first few years of your loan. After moving into a new property, some customers like to have a time of consolidation of finances, especially after*

all the expenses of moving. To assist this, you may like to consider reducing your repayments during the first few years of your mortgage. This is called the low start option.
Alternatively, as the loan balance is at its highest in the first few years, most of your standard repayments go towards interest charges in these years. If you are able to increase your repayments during the first few years, this will have a significant effect in either reducing your overall repayments or reducing the term of the mortgage. This is called the fast start option.
Would you like to model either of these scenarios?

This screen contains a drop-down menu containing the following three options:

- No
- Yes, low start option
- Yes, fast start option.

If the user selects the low start (or fast start) option, two further drop-down menus are displayed, allowing the user to select the percentage by which repayments are to be reduced (or increased) in the early years, and the number of years for which this reduction is to be applied.

Clicking on a "Next>" button on this screen advances the repayment profile wizard to the step 31.

(Step 31) The repayment profile wizard now displays a screen containing the following text:

Visual Loan Modeller - Repayment Profile Wizard
During the term of your loan, your income is likely to rise.

Most things you purchase will also rise in price due to inflation. However, usually mortgage repayments do not change over the term of the loan except due to interest rate fluctuations.
However, if you increase your repayments by a few percent each year, you can either reduce your initial repayments or repay your loan more quickly.
Would you like to model the impact of increasing your repayments?

Two selection buttons on this screen enable the user to answer "Yes" or "No" to this question. If the user selects "Yes", a drop-down menu is displayed, allowing the user to specify the percentage by which repayments are to be increased each year. Any increases will take effect after the end of any low-start or fast-start period.

Clicking on a "Next>" button on this screen advances the repayment profile wizard to the step 32.

(Step 32) The repayment profile wizard now displays a screen containing the following text:

Visual Loan Modeller - Repayment Profile Wizard
Some customers are keen to reduce their mortgage by making lump sum payments to reduce their loan balance.
This can either be a one-off payment or a series of such payments. If you are considering regular lump sum payments, you may instead like to consider changing the monthly repayment profile, whereby you can increase repayments each year in certain months e.g. to coincide with annual bonus payments.
Would you like to model the impact of making lump sum payments?

Two selection buttons on this screen enable the user to answer "Yes" or "No" to this question. If the user selects "Yes", the following items are displayed:

- a drop-down menu, allowing the user to specify either a one-off payment, annual payments, or monthly payments.
- a box allowing the user to enter the amount of the payment
- in the case of a one-off payment, a pair of drop-down menus allowing the user to specify the date of the lump sum payment.
- in the case of annual or monthly payments, two pairs of drop-down menus allowing the user to specify the dates (month and year) of the first and last lump sum payments.

Clicking on a "Next>" button on this screen advances the repayment profile wizard to the step 33.

(Step 33) The repayment profile wizard now displays a screen containing the following text:

> ***Visual Loan Modeller - Repayment Profile Wizard***
> *If you have some big expenses coming up, such as sending a child to college, you may like to consider planning reduced payments to help your finances then.*
> *Would you like to plan for some reduced payments in the future?*

Two selection buttons on this screen enable the user to answer "Yes" or "No" to this question. If the user selects "Yes", the following items are displayed:

- a drop-down menu, allowing the user to specify a percentage amount by which payments are to be reduced.
- two pairs of drop-down menus allowing the user to specify start and end dates (month and year) for the period of reduced repayments.

Clicking on a "Next>" button on this screen advances the repayment profile wizard to the step 34.

(Step 34) The repayment profile wizard now displays a screen containing the following text:

> ***Visual Loan Modeller - Repayment Profile Wizard***
> *Rather than paying the same amount each month of the year, would you like to change your repayments in different months? For example, you could reduce your December payments to help pay for Christmas, or increase them in a month when you receive an annual bonus. If you receive seasonal income, you can reduce payments during the off season.*
> *Just move the sliders to select your monthly repayment profile.*

A set of twelve sliders on this screen enable the user to increase or decrease repayments by a specified percentage in each of the twelve months of the year.

Clicking on a "Next>" button on this screen advances the repayment profile wizard to the step 35.

(Step 35) The repayment profile wizard finally displays a screen containing a summary of all the options specified by the user.

Clicking on a "Finish" button on this screen causes the loan modeller application to recalculate the repayments, taking into account all the repayment profile options specified by the user. The calculation is performed as follows. First, the loan modeller application allocates a monthly index for each month of the term, set initially to 1. It then goes through the fast/low start months and increases/reduces this index by the required percentage. It then implements the regular increasing option by

increasing the repayment index each twelve months. Then it applies the reduced payments option. Finally all of the repayment index figures are multiplied by the monthly profile values across the whole term. The level of repayments required is then calculated by a goalseeking function altering the repayment level until the closing balance is zero.

The loan modeller application then returns to the main screen, to display the results of this recalculation. In particular, the graph 20 and the initial payment 21 are updated.

Figure 4 shows an example of the graph 20 after running the repayment profile wizard (assuming that "monthly repayments" is selected in menu 22). It can be seen that, in this example, the user has specified the following options:

- a low-start period, from 2000 up to 2002,
- regularly increasing payments in each year after the low-start period, and
- a reduced payment period from 2007 to 2011.

Each of the screens displayed in steps 30-35 above also contains a "Cancel" button. Clicking on this returns the application to the main screen without making any changes to the repayment profile. Each of the screens displayed in steps 31-35 above also contains a "<Previous" button. Clicking on this returns the repayment profile wizard to the previous step.

After the repayment profile wizard has completed, the "Repayment Profile Wizard" button 27 (Figure 2) is replaced by a "Change Repayment Profile" button. If the user clicks on this button, a screen is displayed allowing the user to change any of the repayment profile options previously specified.

As shown in Figure 2, the main screen also includes the following buttons:

- View Details - clicking on this displays further details of the loan repayments, including the monthly repayments for each month of the loan.
- Apply for loan - clicking on this allows the user to apply to the financial institution for a loan on the basis of the selected options.
- Save Details - clicking on this saves the details of repayment profile options currently selected by the user.

Some possible modifications

It will be appreciated that many modifications may be made to the system described above without departing from the scope of the present invention. For example, although in the above description the loan modeller application is accessed over the Internet, in an alternative form of the invention, it may be a stand-alone application which can run on the user's personal computer or that of a financial services company or financial advisor, without requiring Internet access.

Whilst the application described above relates primarily to modelling new loans, alternatively the application could be run during the term of an existing loan to enable remodelling, for example to understand the implications of making lump sum payments or increasing repayments. In such a scenario, the initial balance would be the outstanding balance on the loan, the initial term would be the remainder of the existing term of the loan and the interest profile would be taken from the existing loan.

CLAIMS

1. A computer-implemented method for modelling loans, the method comprising:
(a) enabling a user to enter parameters relevant to a loan, the parameters including loan amount and loan term;
(b) enabling the user to specify a number of options relevant to the loan, the options including at least one of the following:

- low-start or fast-start loans,
- regularly increasing repayments,
- reduced repayments for a specified period, and
- variable repayments over different months of the year;

(c) computing repayments due over the term of the loan, based on the parameters and options entered by the user; and
(d) visually displaying information indicating the repayments due over the term of the loan.

2. A method according to Claim 1 wherein the options also include lump sum repayments at specified dates.

3. A method according to Claim 1 wherein the step of enabling the user to specify a number of options comprises presenting the user with a sequence of screens, each of which explains a particular option and allows the user to accept or reject that option.

4. A method according to Claim 1 including the step of enabling the user to select one of a number of interest rate options.

5. A method according to Claim 1 wherein the information indicating the repayments due over the term of the loan is displayed in a visual representation including at least one of the following: a graph, a bar chart, a table.

6. A method according to Claim 1 including the step of enabling the user to select one of the following options for display in respect of each month over the term of the loan: monthly repayment; loan balance, interest charge, cumulative interest, and cumulative repayments.

7. A method according to Claim 1 wherein the step of computing repayments due over the term of the loan comprises:
(a) allocating a monthly index for each month of the term, set initially to a constant value for each month;
(b) implementing any fast-start or low-start option by modifying the index by a required percentage for a specified period;
(c) implementing any regular increasing option by increasing the index over the period of the loan;
(d) implementing any reduced payments option, by decreasing the index for a specified period;
(e) implementing any variable repayments option, by multiplying the index for each month by a monthly profile value; and
(f) calculating the level of repayments required, using a goalseeking function which alters the repayment level until the closing balance is zero.

8. A computer system for modelling loans, comprising:
(a) means for enabling a user to enter parameters relevant to a loan, the parameters including loan amount and loan term;
(b) means for enabling the user to specify a number of options relevant to the loan, the options including at least one of the following:

- low-start or fast-start loans,
- regularly increasing repayments,
- reduced repayments for a specified period, and
- variable repayments over different months of the year;

(c) means for computing repayments due over the term of the loan, based on the parameters and options entered by the user; and

(d) means for visually displaying information indicating the repayments due over the term of the loan.

9. A computer system according to Claim 8, comprising a server computer running a server application, the server application being accessible by a number of client applications over a network.

10. An information carrier, holding a program for performing a computer-implemented method for modelling loans, the method comprising:
(a) enabling a user to enter parameters relevant to a loan, the parameters including loan amount and loan term;
(b) enabling the user to specify a number of options relevant to the loan, the options including at least one of the following:

- low-start or fast-start loans,
- regularly increasing repayments,
- reduced repayments for a specified period, and
- variable repayments over different months of the year;

(c) computing repayments due over the term of the loan, based on the parameters and options entered by the user; and
(d) visually displaying information indicating the repayments due over the term of the loan.

ABSTRACT

A method for modelling loans comprises allowing a user to enter parameters relevant to the loan, including the loan amount, loan term and interest rate, and then visually displaying information indicating the repayments due over the term of the loan. The user can also select one or more of the following options : low-start or fast-start loans; regularly increasing repayments; lump sum repayments at specified dates; reduced repayments for a specified period; and variable repayments over different months of the year. The information indicating the repayments due over the term of the loan is displayed in some easily-understandable visual representation, such as a graph, bar chart, or table.

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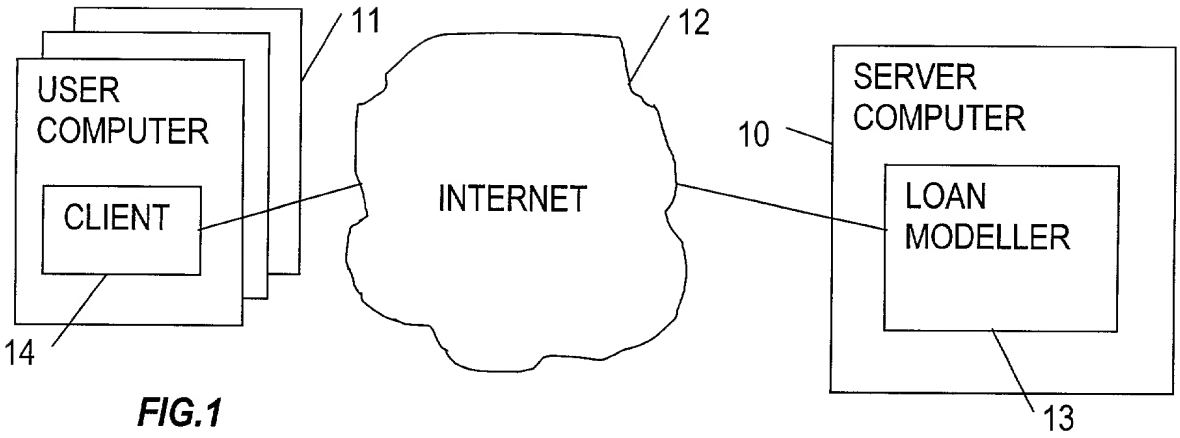
USER
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LOAN
MODELLER
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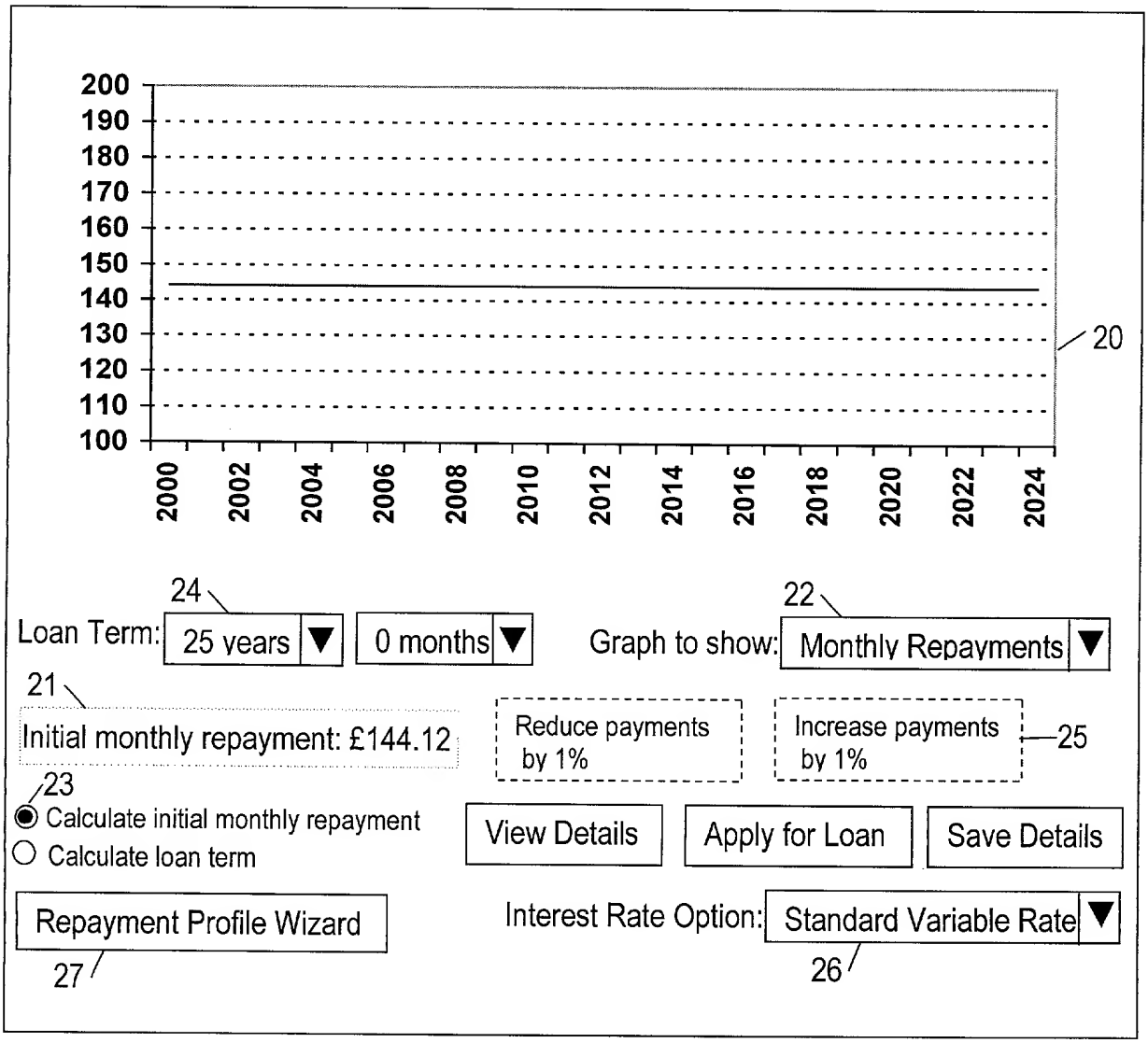
FIG.1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2022
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20
24
Loan Term:
25 years
0 months
22
Graph to show:
Monthly Repayments
21
Initial monthly repayment: £144.12
Reduce payments by 1%
Increase payments by 1%
25
23
Calculate initial monthly repayment
Calculate loan term
View Details
Apply for Loan
Save Details
Repayment Profile Wizard
27
Interest Rate Option:
Standard Variable Rate
26

FIG.2

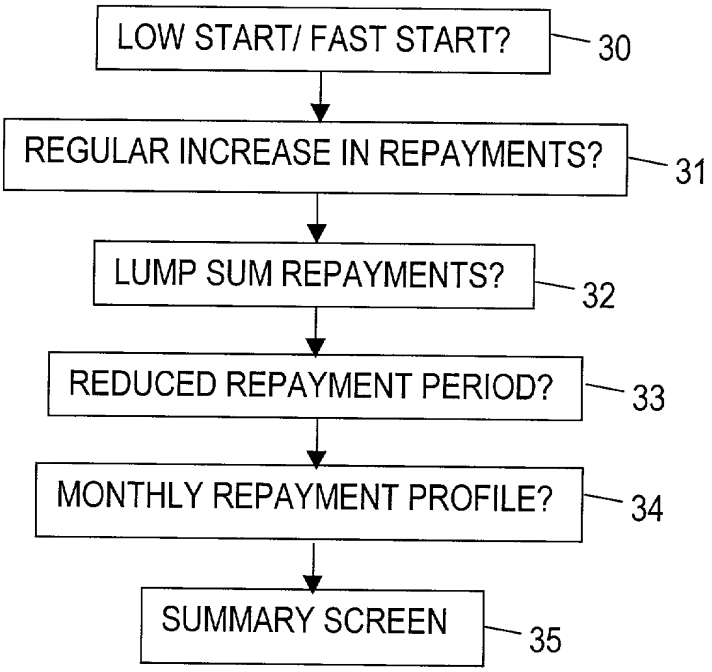
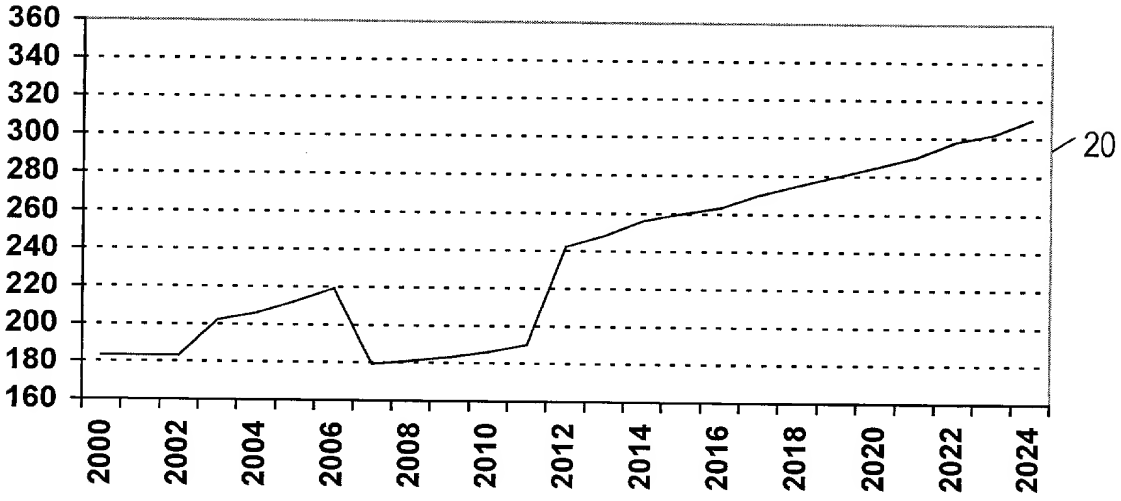

LOW START/ FAST START?
30
REGULAR INCREASE IN REPAYMENTS?
31
LUMP SUM REPAYMENTS?
32
REDUCED REPAYMENT PERIOD?
33
MONTHLY REPAYMENT PROFILE?
34
SUMMARY SCREEN
35

FIG.3


360
340
320
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280
260
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220
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180
160
2000
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2024
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FIG.4

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **Loan Modeller Method and Apparatus**, the specification of which:

X is attached hereto.

__ was filed on _____ as
Application Serial No. _____
and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

PRIOR FOREIGN APPLICATION(S)

			Priority Claimed	
Country	**Number**	**Date Filed**	**Yes**	**No**
United Kingdom	GB 9929114.8	10 Dec 1999	X	__
_____	_____	_____	__	__
_____	_____	_____	__	__

I hereby claim the benefit under Title 35, United States Code Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

Application Serial No.	**Filing Date**	**Status**
_____	_____	_____
_____	_____	_____

And I hereby appoint Thomas E. Smith, Registration No. 18,243, Dennis M. McWilliams, Registration No. 25,195, James R. Sweeney, Registration No. 18,721, William M. Lee, Jr., Registration No. 26,935, Glenn W. Ohlson, Registration No. 28,455, David C. Brezina, Registration No. 34,128, Jeffrey R. Gray, Registration No. 33,391, Timothy J. Engling, Registration No. 39,970, Gregory B. Beggs, Registration No. 19,286, Gerald S. Geren, Registration No. 24,528, Peter J. Shakula, Registration No. 40,808, and Robert F.I. Conte, Registration No. 20,354 to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith. It is requested that all communications be directed to Lee, Mann, Smith, McWilliams, Sweeney & Ohlson, P.O. Box 2786, Chicago, Illinois 60690-2786, telephone number (312) 368-1300.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor: **Christopher John Stokes**

Signature C. J. Stokes Date 7 September 2000

Country of Residence: United Kingdom

Country of Citizenship: United Kingdom

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